2. Information Disclosure Statement

The Examiner requested copies of non-patent literature cited in the parent case, Patent Application Serial No. 08/757,645, for consideration. The Examiner indicated that these references were not found in the parent file. Accordingly, applicants prepared a Supplemental Information Disclosure Statement, accompanied by complete copies of all cited references, which was previously submitted with Applicant's Amendment of June 8, 2001. Inasmuch as we already furnished the Examiner with copies of the 28 references cited therein, we will not resubmit copies at this time in the interest of expediency. However, if the Examiner still requires copies of any IDS reference, the Examiner is urged to contact Applicant's attorney at once.

3. Specification

The Examiner objected to the disclosure on the basis of several informalities. First of all, the Examiner observed that the brief description of Fig. 2A1 actually refers to Figs. 2A1-1 and 2A1-2. This discrepancy resulted because the original Figure could not fit on one standard 8.5-by-11 sheet of paper, while still meeting the drafting requirements for character height. Accordingly, the specification has been amended for consistency with the drawings presently on file.

Similarly, the Examiner observed that the brief description of Fig. 2B3 actually refers to Figs. 2B3-1 and 2B3-2. Appropriate corrections have been made to the specification.

The Examiner conjectured that, although Figs. 2C1 and 2C1' refer to feed delivery vehicles, they appear to be feedbunk reading vehicles or veterinary vehicles. This is not correct. The vehicles are, indeed, feed delivery vehicles, as described in the specification. Likewise, Figs. 2D1 and 2D2 refer to veterinarian vehicles, as correctly indicated in the specification, and not to feedbunk reading vehicles. Figs. 2E1 and 2E2 refer to nutritionist vehicles, as correctly pointed out in the specification. Notwithstanding the foregoing, the Examiner might have been confused by the fact that the drawing of a cow, which was present in Figs. 2C1, was inadvertently omitted from Figs. 2D1 and 2E1. This is a drafting error which will be corrected by applicants via submission of a new set of formal drawings when the case is allowed.

4. Drawings

The Examiner objected to the drawings for the same reasons noted above in connection with the specification. As stated above, the Examiner's objections are related to a drafting error which will be corrected by applicants via submission of a new set of formal drawings when the case is allowed.

5. Claim Objections

The Examiner objected to claim 9 because the word "infor-mation" should be spelled as "information". The Examiner objected to claim 12 because the word "modeling" should be spelled as "modeling". Appropriate corrections have been made to the claims.

6. Claim Rejections – 35 USC 112

The Examiner rejected claims 1-11 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As for claim 1, the Examiner observed that the phrase "feedlot vehicle team" is confusing. Inasmuch as it is irrelevant where the feedlot management computer system is installed, the phrase "feedlot vehicle team" was deleted from the claim. The potentially ambiguous phrase "periodically up-dated" in claim 2 was replaced with the more precise phrase "repeatedly updated". In claim 3, the "and/or" construction was eliminated.

The Examiner rejected claim 12 under the second paragraph of 35 USC 112. Lines 2-3 recite "a plurality of vehicles" which are each described as including an entire feedlot computer network. This is clearly impractical, and the result of a word processing error. The preamble of claim 12 has been amended to set forth an animal feedlot management system that comprises a plurality of feedlot vehicle computer systems. Each computer system is now described as including a communications mechanism for communicating with a feedlot computer network comprised of a feedbunk reading computer system, a means for producing, storing and displaying feed ration delivery data, a feedmill computer system, and a feedlot management computer system. The confusing and redundant phrase "a digital data communications system integrated with said feedlot computer network" has been deleted.

The Examiner stated that the word "subsystem" of lines 9 and 11 is confusing. This term

has been replaced with the word "mechanism" where appropriate, to indicate that the function is performed by the feedlot vehicle computer system or a device that is coupled to the feedlot vehicle computer system. Likewise, the Examiner did not understand the phrase "symbolically embedded". This has been replaced with clearer language to specify a reference coordinate system defined within the feedlot. Finally, the circular definition in lines 6-7 of claim 12 has been deleted.

The Examiner rejected claim 13 under the second paragraph of 35 USC 112. The phrase "a method of feedlot management system for installation..." is confusing and technically inaccurate. Accordingly, the preamble of claim 13 has been redrafted to specify a "computer-implemented method of animal feedlot management, the method comprising the steps of:". The circular definition in line 6 of the claim has been addressed by the aforementioned modification to the claim preamble, and also by a modification to the offending claim element. This element has been amended to read: "providing a feedlot computer network comprised of a feedbunk reading computer system, a means for producing, storing and displaying feed ration deliver data, a feedmill computer system, and a feedlot management computer system", to clearly indicate that the feedlot management computer system is, in fact, a part of the network.

In view of the foregoing amendments to the claims, it is submitted that claims 1-13 meet all applicable requirements of 35 USC 112.

7. Claim Rejections – 35 USC 102(e)

Claims 1-13 were rejected under 35 USC 102(e) as being anticipated by Anderson et al (6,032,084). Note that Anderson and the present patent application are, and always were, commonly owned. In view of the amendments to the claims, and the common ownership of the present application with respect to the cited reference, the present patent application is not anticipated by Anderson under 35 USC 102.

8. Summary

In view of the foregoing amendments to the claims, it is submitted that all pending claims are now in condition for allowance, and such action by the Examiner is earnestly solicited. If, however, the Examiner has any questions or concerns, he is invited to contact the Applicant's

attorney at 1-212-551-5002.

Respectfully submitted,

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November 2, 2001

CERTIFICATE OF MAILING

I hereby certify that I have a reasonable basis that this paper, along with any referred to above, (i) are being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231,

DATE: November 2, 2001

NAME: Mary Nagle

SIGNATURE: Mary Nagle

MARKED UP VERSION OF CLAIMS

1. A [feedlot] computer network [installation] for managing [feedlot] operations within a feedlot having a plurality of animal pens each having a feedbunk [and containing one or more animals for feeding and health maintenance], said [feedlot] computer network [installation] comprising:

a feedbunk reading computer system, associated with [installed onboard] a feedbunk reading vehicle transportable to [each said] animal pens in said feedlot, said feedbunk reading computer system including [means] mechanisms for receiving, storing and displaying [said] animal health data and feed ration dispensed data;

the feedbunk reading computer system further including mechanisms [a means] for producing, storing and displaying feed ration delivery data, said feed ration delivery data specifying the assigned amount of feed ration to be delivered to the feedbunks associated with a plurality of animal pens along a feeding route [during a specified number of feeding cycles to be executed] within a predetermined time period, and said feed ration dispensed data indicating the actual amount of feed ration delivered to the feedbunks of said animal pens during [each said specified feeding cycle] the predetermined time period;

a plurality of feed delivery vehicles each [having] being associated with a feed delivery vehicle [a] computer system [, each said feed delivery vehicle computer system being installed onboard each said feed delivery vehicle and] transportable to each said animal pen in said feedlot and having a storage [means] mechanism for storing an assigned feed load, and a feed metering [means] mechanism for [metering] measuring the actual amount of feed ration delivered to the feedbunks associated with said [specified sequence of animal pens] feeding route, and a data [producing means] generation mechanism for producing said feed ration dispensed data indicative of the actual amount of feed ration delivered to said feedbunks, each said feed delivery vehicle computer system [being operatable by a feed delivery vehicle operator assigned to said feed delivery vehicle and] having [means] mechanisms for receiving, storing and displaying said feed ration delivery data provided from said feedbunk reading computer system and [means] a mechanism for receiving said feed ration dispensed data produced from said metering [means]

mechanism aboard said feed delivery vehicle;

a feedmill computer system, installed at a feedmill in said feedlot and having [means] mechanisms for receiving, storing and displaying said feed ration delivery data produced from said feedbunk reading computer system;

a feedlot management computer system [, installed abroad a feedlot management vehicle team], for receiving, storing and displaying said feed ration delivery data, said feed ration dispensed data and said animal health data, for use by a feedlot manager of said feedlot;

a digital data communications system integrated with said feedlot computer network, for transferring digital data files among said feedbunk reading computer system, said feedmill computer system, said plurality of feed delivery vehicle computer systems, said feedlot management computer system and said feedmill computer system, wherein said digital data files [contain] include any of said feed ration deliver data, said animal health data and said feed ration dispensed data; and

a database for maintaining information representative of a model of said feedlot and objects contained therein, each said feed delivery computer system [installed on-board each said plurality of feed delivery vehicles, includes] including a [subsystem] mechanism for viewing [an aspect] at least a portion of said model maintained in said database, each feed delivery computer system also including a vehicle information acquisition [means] mechanism for acquiring vehicle information regarding (i) the position of said feed delivery vehicle relative to a first prespecified coordinate referenced frame, and/or (ii) the state of operation of said feed delivery vehicle and information to said database to specify in the position and/or the state of operation of said feed delivery vehicle represented within said model of said feedlot.

2. The [feedlot] computer network [installation] of claim 1, wherein said vehicle information acquisition [means] mechanism comprises a satellite-based global positioning system, and said database is [periodically up-dated] repeatedly updated using said vehicle information obtained from said satellite-based global positioning system.

3. The [feedlot] computer network [installation] of claim 2, [which] further [comprises] comprising an animal information acquisition [means] mechanism for acquiring animal information regarding at least one of: (a) the position of animals in said feedlot relative to [second] said prespecified coordinate reference frame, and [/or] (b) the body-temperature of said animals, [so] such that said feedlot model reflects at least one of the position and [/or] body-temperature of said animals.

4. The [feedlot] computer network [installation] of claim 1, wherein said [subsystem onboard each said] feed delivery vehicle computer system is coupled to [comprises] a stereoscopic display subsystem which permits the driver to stereoscopically view any aspect of said model, including the driver's vehicle as it is being navigated through the feedlot during feedlot operations.

5. The [feedlot] computer network [installation] of claim 4, wherein each said feed delivery vehicle is remotely controlled through the feedlot by an operator using a remotely situated workstation.

6. The [feedlot] computer network [installation] of claim 5, wherein each said feed delivery vehicle is equipped with [stereoscopes] a stereoscopic vision subsystem having a field of view along the navigational course of said feedlot vehicle.

7. The [feedlot] computer network [installation] of claim 6, wherein said database is maintained aboard an Internet server operably associated with an Internet-based digital communications network[, with which each said subsystem is in communications network, with which each said subsytem is in communication].

8. The [feedlot] computer network [installation] of claim 6, wherein a replica of said database in maintained aboard each said feedlot vehicle computer system.

9. The [feedlot] computer network [installation] of claim 3, wherein [said subsystem] the feedlot vehicle computer system further comprises a data retrieval mechanism for ascertaining [can be used to ascertain] both vehicle and animal [infor-mation] information reflected in said model of the feedlot.

10. The [feedlot] computer network [installation] of claim 1, which further comprises at least one workstation for viewing said model of said feedlot during feedlot operations.

11. The [feedlot] computer network [installation] of claim 1, which further comprises at least one workstation for viewing said model of a feedlot vehicle in said feedlot and remotely navigating said [feed-lot] feedlot vehicle along a course in said feedlot.

12. An animal feedlot management system, [which comprises] comprising:

a plurality of feedlot [vehicles, each employing an on-board] vehicle computer systems which each include[s]:

a communications mechanism for communicating with a feedlot computer network comprised of a feedbunk reading computer system, a means for producing, storing and displaying feed ration delivery data, a feedmill computer system, and a feedlot management computer system, [a digital data communications system integrated with said feedlot computer network,]

a feedlot [modeling] modeling mechanism [subsystem] for maintaining a geometrical database containing a geometrical model of the feedlot and objects contained therein

a coordinate acquisition [subsytem] mechanism for acquiring coordinate information specifying

the position of the feedlot vehicle relative to a [coordinate] reference coordinate system [symbolically embedded] defined within the feedlot, and

a geometrical database processor for processing information in said geometrical database using said coordinate information in order to update said geometrical [mode] model.

13. A computer-implemented method of animal feedlot management [system for installation in an animal feedlot], the method comprising the steps of:

(a) providing a feedlot computer network comprised of a feedbunk reading computer system, a means for producing, storing and displaying feed ration deliver data, a feedmill computer system, and a feedlot management computer system, [a digital data communications system integrated with said feedlot computer network];

(b) providing a feedlot vehicle associated with [an on-board] a portable computer system in communication with said feedlot computer network, said portable [on-board] computer system using real-time VR [modeling] modeling and coordinate acquisition techniques in order to maintain a 3-D geometrical model of said feedlot and objects therein including said feedlot vehicle; and

(c) navigating said feedlot vehicle while viewing [an aspect] at least a portion of said feedlot model from within said feedlot vehicle.

feedlot management system for installation in an animal feedlot, comprising the steps of providing a feedlot computer network comprised of a feed-bunk reading computer system, a means for producing, storing and displaying feed ration delivery data, a feedmill computer system, a feedlot management computer system, a digital data communications system integrated with the feedlot computer network; providing a feedlot vehicle with an on-board computer system in communication with the feedlot computer network, the onboard computer system using real-time VR modelling and coordinate acquisition techniques in order to maintain a 3-D geometrical model of the feedlot and objects therein including the feedlot vehicle; and navigating the feedlot vehicle while viewing an aspect of the feedlot model from within the feedlot vehicle.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic representation of a feedlot within which the feedlot computer network of the present invention is installed in order to practice the system and method of the present invention.

~~Fig. 2A1 is a block system diagram~~ Figs. 2A1-1 and 2A1-2 together comprise a system block diagram of the illustrative embodiment of the feedlot computer network of the present invention, showing the 1st feed delivery computer system, the nth feed delivery computer system, the feedmill computer system, the feedlot management computer system, the feedbunk reading computer system, the veterinary computer system, the nutritionist reading computer system, the VR workstation for the veterinary vehicle, the VR workstation for

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bunk being uniformly filled with an assigned amount of feed ration.

Fig. 2B2' is a schematic representation of the n^{th} feed delivery vehicle of the present invention shown operating in its "umanned navigation" mode of operation with a human operator sitting before its remote-situated VR workstation and remotely navigating the vehicle along a preplotted navigational course passing along a feedbunk being uniformly filled with an assigned amount of feed ration.

~~Fig 2B3 is a schematic system diagram~~ Figs. 2B3-1 and 2B3-2 together comprise a schematic system diagram of the computer system aboard the n^{th} feed delivery vehicle, showing the components used to realize the subsystems thereof.

Fig. 2B4 is a geometrical representation of a 3-D VR model of a portion of an animal feedlot (i.e. VR-based feedlot model), showing one of its pens, a feedbunk and a feed delivery vehicle, originally created in the centralized VR workstation and thereafter maintained and updated within each of the VR subsystems in the feedlot computer network.

Fig. 2B5 is a geometrical representation of a 3-D VR-based model of the n^{th} feed delivery vehicle, maintained within each VR subsystem of the first illustrative embodiment, in which a local coordinate reference system (i.e. coordinate reference frame) is symbolically embedded therein, and submodels of its front and rear GPS receivers are shown mounted along the centerline $1_{FDV}(n)$ of the vehicle at endpoints P_{FDV1} (n) and P_{FDV2} (n), respectively, and its feed delivery chute is shown pivotally mounted about a pivot point $P_{FDV}(n)$ located along the vehicle's centerline $1_{FDV}(n)$.